

REMARKS

By this Amendment, claims 1, 14, 16, and 31 are amended. The claims have been amended to further recite the claimed subject matter without the intention of narrowing the scope of any of the claims. No new matter has been added. Accordingly, after entry of the Amendment, claims 1-51 will remain pending in the patent application. Reconsideration and allowance of the present application based on the following remarks are respectfully requested.

Applicants respectfully request an initialed copy of PTO Form 1449 of November 12, 2003, a copy of which is attached along with a copy of the stamped postcard receipt therefor.

In the Office Action, claims 1, 16, 21, and 31 were objected to. The Examiner objected to claims 1, 16, and 21 on the grounds that the phrase "structure configured to extend along at least a part of the boundary of said space" is unclear and claim 31 was objected to on the grounds that the phrase "the boundary of a portion of said surface" is unclear. The Examiner notes that "the boundary seems to be defined by the confinement structure on the side." Applicants note in response that the liquid confinement structure may indeed both define the boundary of the space and extend along a part of the boundary of the space. The Examiner's observation is therefore consistent with the claim language, which is believed to be clear. The liquid confinement structure may extend along "the side," "the top," and/or "the bottom," of the space. For example, the confinement structure may extend along that part of the boundary defined by the bottom surface of the member 12 as viewed in Figures 2-4. It is therefore requested that the objection to claims 1, 16, and 21 be withdrawn since the objected to language in each of those claims is believed to be clear. Claim 31 has been amended to further recite the invention without the intention of narrowing the scope of the claim and thus, without agreeing to the objection, the objection to claim 31 is now moot.

Claims 1-51 stand rejected under the doctrine of double patenting over claims 1-33 and 42-45 of U.S. Application No. 10/705,783 (now U.S. Patent No. 6,952,253 B2). Applicants have submitted a Terminal Disclaimer herewith and, accordingly, respectfully request that the rejections under double patenting be withdrawn.

Claims 1, 7-10, 12-18, 31, 32, 35-37, 40, 48, and 51 stand rejected under 35 U.S.C. §102(e) based on Lin (U.S. Pat. Publ. No. 2004/0075895). The rejection is respectfully traversed.

Claim 1 is patentable over Lin at least because Lin fails to disclose, teach, or suggest a lithographic projection apparatus comprising, *inter alia*, "a liquid confinement structure

configured to extend along at least a part of the boundary of said space, configured to remain substantially stationary in a plane substantially parallel to a surface of the substrate and having an inlet configured to supply liquid onto the substrate.” Therefore, Lin does not disclose, teach or suggest each and every feature recited by claim 1 and, as a result, claim 1 is patentable over Lin.

Lin discloses an apparatus for immersion lithography that includes a fluid containing wafer stage 12 which includes vacuum means 14 for clamping the wafer 20 to a wafer chuck 16. (*See* paragraph [0031] of Lin). Lin also discloses that the fluid containing wafer stage includes an internal cavity 18 for holding a fluid 22. (*See* paragraph [0031] of Lin) Lin further discloses that a fluid retaining means 82 is utilized to keep the fluid 22 between the front surface 44 of the imaging lens 36 and the top surface 38 of the wafer 20. (*See* paragraph [0037] of Lin). In operation, the wafer stage of Lin, including the fluid retaining means 82, the side 42 of the wafer stage, pump 28, and filter 26 (all alleged by the Examiner as being the liquid confinement structure), moves laterally in a plane parallel to the surface of the wafer and therefore is *not substantially stationary in a plane substantially parallel to a surface of the substrate* (*See* paragraph [0032] of Lin). Further, Lin does not disclose, teach, or suggest a liquid confinement structure that is substantially stationary in a plane substantially parallel to a surface of a substrate having an inlet configured to supply liquid onto the substrate, as claimed. The fluid inlet 30 of Lin (*see* paragraph [0032] of Lin) is disposed in the wafer stage and in operation moves, along with the wafer stage, in a plane parallel to a surface of the wafer. Therefore, claim 1 is patentable over Lin.

Claims 7-10, 12-15, and 48 are patentable over Lin at least by virtue of their dependency from claim 1 and for the additional features recited therein.

Claim 16 is patentable over Lin at least because Lin fails to disclose, teach, or suggest an immersion lithographic projection apparatus, comprising, *inter alia*, “a liquid confinement structure configured to extend along at least part of the boundary of a localized space on the surface of a substrate, said space configured to contain a liquid through which said beam is to be projected and said structure configured to substantially seal at least part of said space, wherein liquid would be substantially prevented from flowing across a portion of a surface of a substrate located outside of the localized space.” Therefore, Lin does not disclose, teach or suggest each and every feature recited by claim 16 and, as a result, claim 16 is patentable over Lin.

Lin merely discloses that a wafer is placed in a cavity 18 formed in the wafer chuck 16. The space defined by the cavity 18 is filled with a liquid 22. The fluid retaining means 82,

the side 42 of the wafer stage, pump 28, and the filter 26 of Lin extend along the outer dimensions of the wafer stage, they do not extend along part of a boundary of a localized space on the surface of a substrate and they do not prevent liquid from flowing across a portion of a surface of a substrate located outside of the localized space. Rather, the fluid 22 of Lin is free to move about within the entire wafer stage and across the entire surface of the wafer. Therefore, claim 16 is patentable over Lin.

Claims 17-18 are patentable over Lin at least by virtue of their dependency from claim 16 and for the additional features recited therein.

Claim 31 is patentable over Lin at least because Lin fails to disclose, teach, or suggest an immersion lithographic projection apparatus comprising, *inter alia*, a liquid confinement structure configured to substantially seal at least part of a space bounded by a surface of a substrate and the periphery of a localized portion of said surface, wherein liquid would be substantially prevented from flowing across a portion of a surface of a substrate located outside of the space. Therefore, Lin does not disclose, teach or suggest each and every feature recited by claim 31 and, as a result, claim 31 is patentable over Lin.

As mentioned previously in the discussion related to claim 16, the liquid 22 in Lin can freely move inside the cavity 18 without any liquid being maintained in a space bounded by a surface of the wafer 20 and the periphery of a localized portion of the surface. No such space is defined by Lin, and further, Lin is completely silent about preventing liquid from flowing across a portion of a surface of a substrate located outside the space. Therefore, Lin cannot anticipate claim 31.

Claims 32 and 35 are patentable over Lin at least by virtue of their dependency from claim 31 and for the additional features recited therein.

With respect to claim 36, the side 42 of the chuck in Lin (identified as the “liquid confinement structure” by the Office Action) does not have an aperture that has a cross-sectional area smaller than a surface area of the substrate. To the contrary, the cross-sectional area of the side 42 is larger than the surface area of the substrate. Lin is completely silent about a liquid confinement structure having the characteristics of claim 36.

It appears that the Examiner is relying on the area within the element 82 of Lin being smaller than the surface of the substrate as meeting the claim limitation of “a liquid confinement structure having an aperture having a cross-sectional area smaller than a surface area of a substrate.” Assuming, without agreeing, that this characterization is correct, Applicants respectfully submit that the Examiner has failed to make a proper showing of anticipation. Even if the element 82 of Lin is properly treated as being a part of the claimed

“liquid confinement structure,” no element has been identified for at least the claim limitation reciting “a seal between said structure and a substrate.” Therefore, claim 36 is patentable over Lin.

Claims 37, 40, and 51 are patentable over Lin at least by virtue of their dependency from claim 36 and for the additional features recited therein.

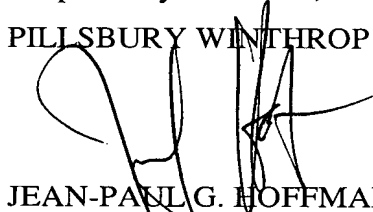
Accordingly, reconsideration and withdrawal of the rejection of claims 1, 7-9, 10, 12-18, 31, 32, 35-37, 40, 48, and 51 under 35 U.S.C. §102(e) based on Lin are respectfully requested.

Applicants have addressed all the Examiner’s rejections and objections and respectfully submit that the application is in condition for allowance. A notice to that effect is earnestly solicited. If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, please contact the undersigned at the telephone number listed below.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

PILLSBURY WINTHROP SHAW PITTMAN LLP



JEAN-PAUL G. HOFFMAN  
Reg. No. 42663  
Tel. No. 703. 770.7794  
Fax No. 703. 770.7901

JPH/GSS  
P.O. Box 10500  
McLean, VA 22102  
703. 770.7900